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ABSTRACT

This document identifies situations in which the use of nonprint media is effective in library instruction programs. Two points are emphasized throughout the document: the use of sophisticated and expensive media is not crucial to the success of a library instruction program, and effective use of media in library instruction involves careful planning and preparation. Among the advantages identified in using media effectively are: the ability to reach a large audience; the extension of influence of quality instruction; the ability to overcome time and space limitations; and the ability to create special effects to enhance learning. Following a general discussion of the use and advantages of media, the paper discusses in turn each of 10 steps involved in the instructional development process: (1) needs assessment; (2) solution selection; (3) analysis of task and content; (4) development of instructional objectives; (5) selection and sequencing of instructional strategies; (6) selection of media; (7) development and location of necessary resources; (8) tryout and evaluation; (9) revision/recycle; and (10) social aspects. A 26-item reference list is included. (THC)

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USE OF MEDIA IN LIBRARY USE INSTRUCTION

by

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Presented at the
Library Instruction Roundtable Program
American Library Association Conference
Dallas, Texas

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USE OF MEDIA IN LIBRARY USE INSTRUCTION

Introduction

My wife and I recently moved to Florida from Indiana, and we have discovered two things. First, we were pleasantly surprised to find about half the population of Indiana already has moved to Florida. Second, we found, to our dismay, that the other half is going to come visit us. Now you may be wondering what that has to do with the use of media in library instruction. One of the major reasons people visit Florida is to visit places like Disneyworld with EPCOT Center and Magic Kingdom. Having had the "opportunity" to visit Disneyland several times during the past year (thanks to our visitors), I continue to be impressed by their sophisticated use of media.

This is not a commercial for Disneyworld—they can do quite well without my help. Nevertheless, their holography, three-dimensional and 360 degree films, and other media are almost unbelievable. Despite the educational emphasis of EPCOT Center, the Disney media is largely aimed at what psychologists term the affective domain of our intellect, which deals with emotions, feelings, and attitudes. In other words, they want to "Gee Whiz" us, and they do it quite effectively. We are, however, often overly influenced by such uses of media in our library instruction efforts.

While we do not want to overlook the importance of the affective domain of our minds in library instruction, we are probably much more concerned with the cognitive domain. That is, we are more concerned with remembering material learned, sythesizing information, and creating new ideas

or information than with changing attitudes. For this, we do not necessarily need to use sophisticated and expensive types of media. What we do need is to identify an effective means of instruction appropriate to the situation, and this may or may not indicate the use of media.

There are two points that I want to make during this presentation. First, use of sophisticated and expensive media are not crucial to the success of a library instruction program. Second, effective use of media in library instruction involves careful planning and preparation. Let me briefly discuss this first point before I discuss in some detail the second point.

Care in Use of Media

To support the point that sophisticated and expensive media are not crucial to the success of a library instruction program, I point to the Earlham College program. Through the efforts of Evan Farber, Tom Kirk, and other librarians formerly or currently at Earlham College, a very successful library instruction program has been developed. Nevertheless, the use of media in the program is largely confined to overhead transparencies and printed handouts, and even these forms of media are not particularly polished.

When it comes to the application of media to library instruction, I firmly believe in the application of the KISS principle. You all know what the KISS principle is, don't you? It is Keep It Simple Stupid. In the real world of finite budgets, numerous demands on our time, and constantly changing libraries, elaborate media programs often create more problems than they solve.

A few years ago I did a survey of the use of slide-tape presentations in academic libraries.[1] I found many librarians reported problems with even this relatively simple form of media. In fact, I decided that slide-tape presentations are deceptively simple, and I concluded there is a direct relationship between the dissatisfaction the responding librarians expressed and how much they tried to do with slide-tape presentations. The longer the presentation and the more they tried to use custom-built equipment, the more problems they had.

Educational media have never fully lived up to their promise. In the aftermath of Sputnik, which occurred more than twenty-five years ago, the federal government attempted to revolutionize our educational system. Millions of dollars were spent on various forms of meditated instruction, such as programmed learning, computer-assisted instruction, and instructional television. Nevertheless, the predominant teaching method remains, at least in higher education, the teacher standing in front of a self-contained classroom talking to a group of twenty to thirty students. In the college classroom, the method usually involves the students taking notes, which the professor expects the students to commit to memory. On occasion, the professor may use the blackboard to explain or emphasize important points to be included in the notes. These notes may be supplemented by readings from a textbook and perhaps even some additional work in the library, probably from the reserve collection.[2]

Researchers have found that many instructors define teaching as capturing and holding the attention of a number of students, and serving as the continuous mediator between the students and information.[3] I prefer to define

teaching as providing those conditions that facilitate learning. Librarians, through their acquisition, organization, maintenance, and interpretation of a portion of recorded knowledge, are facilitating learning, and, therefore, are teaching. I contend that librarians are teachers.

I am not suggesting that the lecture method of teaching is necessarily ineffective. What I do suggest is that there is little empirical evidence to support the strong belief that the lecture is the most effective method of instruction in a wide variety of situations. There may be fewer differences among the various teaching methods than we commonly believe. Ivor Davies, in his book Competency Based Learning, concluded after examining mountains of data and reviews of the literature that one key point stood out: there are no significant differences in terms of learning among the teaching methods available today.[4]

Why has media not been more widely adopted? The fault lies more with the medium rather than with the user. Nevertheless, use of media can be quite time-consuming and complex. For example, the media user is dependent on the availability and reliability of equipment. The following series of cartoons graphically illustrate my point (show slides) It only takes a burntout bulb at the wrong time to permanently turn some media users off.

More important, use of media can be psychologically threatening to some teachers if they believe it may replace them. And, it may be psychologically unsatisfactory to some individuals because of a perceived lack of personal contact between students and teacher, of feedback from students, and of proper supervision of students.[5] We should consider carefully this last issue.

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TODAY'S BRIEFING DEALS WITH OUR BOLD EFFORTS TO DEVELOP DEFENSIVE SATELLITES IN SPACE
—THE SO-CALLED "STAR WARS" SYSTEM
NOW, YOU SKEPTICS SAY THAT IT CAN'T BE DONE—WE CAN'T DEFEND THIS COUNTRY WITH THIS COMPLEX NETWORK OF BUCK ROGERS STUFF THAT HASN'T BEEN INVENTED YET
WELL, YOU SAID THAT ABOUT PUTTING A MAN ON THE MOON
YOU SAID IT ABOUT THE SHUTTLE
WE ACCOMPLISHED THOSE MISSIONS GENTLEMEN, AND I'LL SHOW YOU WE CAN AND WILL ACCOMPLISH THIS MISSION TOO...
BY UTILIZING OUR HIGH-TECH CAPABILITIES AND GOOD OL' AMERICAN KNOW-HOW!!
COULD WE HAVE THE FIRST SLIDE LIEUTENANT!
@☆*?!!
BOOOF

Boswell quoted Samuel Johnson as saying in the eighteenth century, "Lectures were useful, but now when all can read and books are numerous, lectures are no longer necessary."[6] A few hundred years have proved Dr. Johnson wrong. I think the most ardent supporter of the library would recognize the limitations of handing a freshman student an extensive bibliography of readings as the sole means of obtaining a college education. Students need to discuss with instructors their readings and to interact with their fellow students as well as with their instructors. Mediated instruction must provide the opportunity for this interaction if it is to be effective.

One of the more popular books lately is Megatrends, in which the author discusses "high tech" and "high touch." He states "...that whenever new technology is introduced into society, there must be a counterbalancing human response—that is, high touch—or the technology is rejected."[7] According to the author of Megatrends, such "high tech" promises as teleconferencing and the electronic cottage will never catch on. People want to go to the office; people want to be with people. We want to interact with each other, not machines. How many of you really like to leave recorded messages on a telephone answering machine? Maybe it is better than no message, but we really want to talk to people—not machines.

The point is that as we introduce "high tech" into library instruction through use of media, we want to keep in mind our "high touch" needs. Probably the most recent media format introduced into the instructional process involves the computer. The computer offers us exciting possibilities in terms of truly self-paced, individualized instruction. Through the computer we

can tailor instruction to individual students, provide feedback on skills learned, and give positive reinforcement. Despite this, there are still going to be many students who want to ask questions of a real, live reference librarian. Again quoting from Megatrends, "The gee-whiz futurists are always wrong because they believe technological innovation travels in a straight line. It doesn't. It weaves and bobs and lurches and sputters".[8]

Advantages of Media

Having probably thoroughly convinced you not to use media in library instruction, let me outline some of the advantages of media (Overhead Transparency One, item one). First, a major advantage of media is that it can be used to reach a large audience. Media offer the possibility of teaching hundreds of students each day with a single presentation that is just as effective in the fifth or sixth class as it is in the first class. A media presentation never gets tired, and it never forgets any of its message.

Why is this particularly important for librarians? The answer is, of course, obvious. There are a lot of students out there needing library instruction, and there are so few of us. Instead of one librarian for every fifteen, twenty, or even thirty students, as there are for classroom instructors, there may be only one librarian for every 250, 300, or 500 students. In addition, many of the librarians are not involved in library instruction. Faced, for example, with the task of orienting several hundred entering freshmen to the library during the first six weeks of the fall semester, we can look to media for help.

ADVANTAGES OF MEDIA

1. REACH A LARGE AUDIENCE

2. EXTEND THE INFLUENCE OF QUALITY INSTRUCTION

3. OVERCOME TIME AND SPACE

4. CREATE SPECIAL EFFECTS TO ENHANCE LEARNING

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Second, (Overhead Transparency One, item two) media can be used to extend the influence of quality instruction. We are not equally blessed in our teaching ability, but media can be used to extend the influence of a particularly effective librarian to a large number of students. Or, another way of using media, the talents of a number of individuals can be pooled to create a particularly effective instructional presentation. We can use media to bring a single talented librarian to hundreds of students or to bring a team of librarians into a class.

Third, (Overhead Transparency One, item three) media can allow librarians to "overcome time and space." For example, rather than using a librarian to guide a class of twenty-five students through the library, media can be used to bring the library to the classroom. Or, rather than try to pass around a copy of a reference book so that each member of a class can examine a particular section, media can be used so that the entire class can examine the same section simultaneously.

Fourth, (Overhead Transparency One, item four), media can be used to create special effects to enhance learning. Magnification, slow motion, and repetition are of few of the special effects that can be used with media. For example, in reference to the previous advantage, one small section of a book can be magnified through the use of slides so the entire class can focus on a particular entry simultaneously. Or, a variety of voices and music can be taped to accompany slides or video for an orientation to the library. Without media, can you imagine a team of librarians accompanied by an orchestra giving a class of students an orientation to the library?[9]

Instructional Development and Use of Media in Library Instruction

Let me now move on to the second point I want to make today. Effective use of media in library instruction involves careful planning and preparation. I believe that many of the problems reported in the slide-tape survey could have been avoided. We should look at some of the principles used in instructional development for assistance.

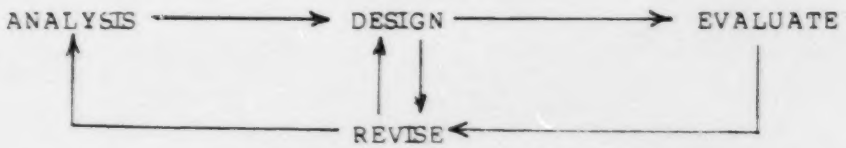
A few years ago Frances Gatz and I wrote an article in Drexel Library Quarterly titled "Application of Instructional Development to mediated Library Instruction."[10] I refer you to that article for additional information. At that time, the Council on Library Resources and the National Endowment for the Humanities had provided a grant to DePauw University for a library instruction program. Frances was employed part-time as an instructional developer while completing her doctoral degree in instructional systems technology from Indiana University. I had completed a masters degree in the same field a couple of years earlier, and we thought it would be a good idea to review instructional development literature and apply the principles of instructional development to the problems of library instruction. The result is the article. Today, I will outline some of the principles as they apply to use of media in library instruction.

First, instructional development is a goal-oriented, problem-solving process that emphasizes the importance of careful information-gathering and analysis, repeated revisions, and immediate evaluation at each stage of the

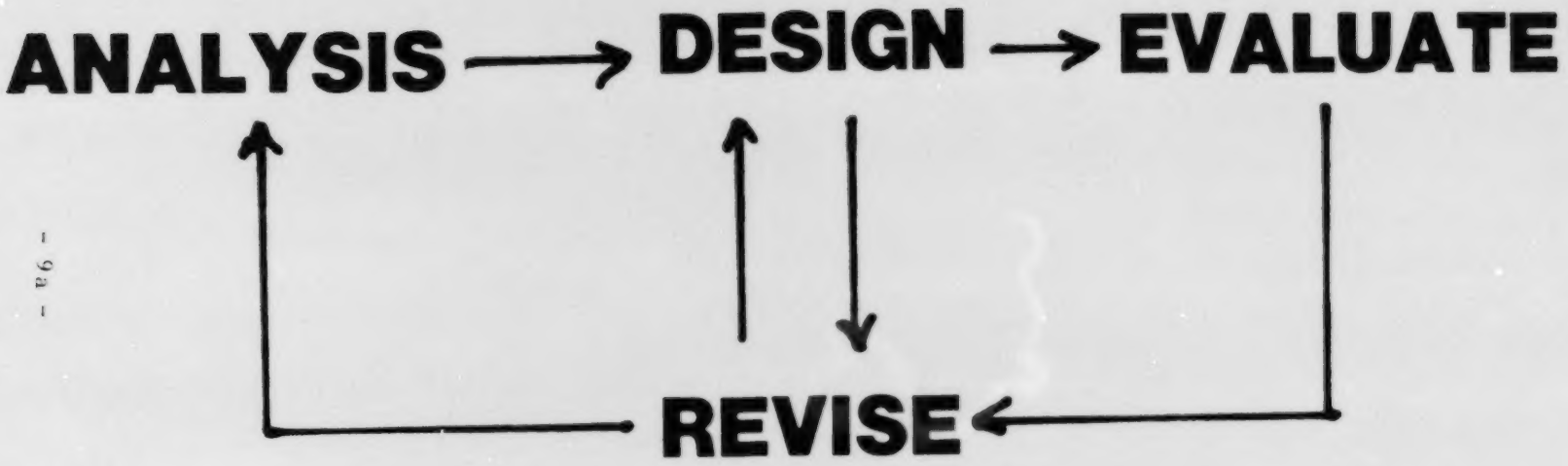
development of an instructional program. This may sound complicated and time-consuming, but it need not be. It is merely a framework within which we can work to create more effective library instruction programs.

The modern history of instructional development began during World War II with the need to train large numbers of armed forces personnel in a short period of time with a limited amount of resources—not unlike the situation we face with each freshman class. Later contributions were made to the theories of instructional development by B. F. Skinner,[11] Robert Mager,[12], Robert Gagne,[13] and others. Literally dozens of different instructional development models have been constructed to aid developers in asking a logical sequence of questions.

The general similarities of the various instructional development models can be illustrated by the following graphic (Overhead Transparency Two):



The "analysis" stage is the foundation of the entire process. It is during this stage that information is gathered in order to describe current needs and expectations and to designate appropriate actions to solve an existing problem. From this information, during the "design" stage, specific performance objectives are determined, the method of instruction selected, and the instructional materials are developed. Finally, the "evaluate" stage involves a series of tryouts of the instructional materials to gather information for the


ANALYSIS
DESIGN
EVALUATE
REVISE

purposes of continual refinement. The inclusion of the "revise" loop illustrates the cyclical nature of the instructional development process through which continual modification of the instruction is an integral part.

The instructional development process can be further elaborated into the following steps (Overhead Transparency Three):

1. Needs Assessment
2. Solution Selection
3. Analysis of Task and Content
4. Development of Instructional Objectives
5. Selection and Sequencing of Instructional Strategies
6. Selection of Media
7. Development and Location of Necessary Resources
8. Tryout and Evaluation
9. Revision/Recycle
10. Social Aspects

While there is some sort of progression as one moves through the various steps, the steps are not mutually exclusive. For example, concern with the social aspects of instructional development should exist throughout the project. In addition, you might note that the selection of the particular media format is well into the process. It is not a good idea to start out thinking, for example, "I want to make a slide-tape program," or, "I want to make a videotape."

INSTRUCTIONAL DEVELOPMENT MODEL

1. Needs Assessment
2. Solution Selection
3. Analysis of Task and Content
4. Development of Instructional Objectives
5. Selecting and Sequencing Instructional Strategies
6. Selection of Media
7. Development and Location of Necessary Resources
8. Tryout and Evaluation
9. Revision/Recycle
10. Social Aspects

Needs Assessment

The needs assessment (Overhead Transparency Four) is simply an analysis of the discrepancy between current and desired student behavior. Information about the kinds of library assignments given to students and the problems encountered by the students is essential before any serious thought can be given to the use of media as part of a possible solution. Interviews with classroom instructors, students, and fellow librarians may be necessary for a thorough understanding of the situation. In addition, observations of students' behavior are often excellent sources of needed information. It is important not to jump to conclusions too early in the process.

Solution Selection

The description of the problem based on the needs assessment is then used to identify possible answers in the solution selection stage of the process (Overhead Transparency Five). It is quite possible that additional library instruction is not the appropriate response. Instead, better communications between the classroom instructor and librarians may result in some other solution, such as modification of the library assignment. Additional library resources or an organizational change in the arrangement of the library may resolve the problem. A brief printed guide often will solve many library instruction problems.

Without overly constraining our selection of possible solutions too early in the process, we, of course, do have to consider some "real world" concerns at this step, such as availability of resources, amount of time required, cooperation of the classroom instructors, and characteristics of the students.

INSTRUCTIONAL DEVELOPMENT MODEL

1. NEEDS ASSESSMENT

An Analysis of the Discrepancy Between Current and Desired Student Behavior

2. SOLUTION SELECTION

(based on)

A. Needs Assessment

B. Availability of Resources

C. Possibility of Constraints

D. Characteristics of Students

Sometimes we acquire a misunderstanding of the students from those who we come in contact with at the reference desk. I attended the Southeastern Conference on Bibliographic Instruction this past May, and the organizers had gathered numerous examples of mediated library instruction programs. Some of the other participants and I found it interesting how many of the programs portrayed students.

Often the programs centered around a student who had put off until the last minute the completion of a library assignment. If a male student was the star, he appeared to be a football player or some other athletic type; if a female student was the star, she was inevitably an attractive blonde-haired coed. The student would dash off to the library where he or she would meet the all-knowing librarian. Thirty minutes later the student would have all the references needed for their library paper. I exaggerate some, but I wonder how students react to our representation of them. We do need to reflect on what we think are the characteristics of the students to whom we are directing our instructions.

A logical outcome of the solution selection step is a general statement of the instructional goals identified. A clearly defined written goal at this point should include at least an' identification of the students to whom the instruction is directed and a general description of the skills that these students should be able to demonstrate. Such an account will help to focus the purposes of the instruction early in the process.

Analysis of Task and Content

The next step in the instructional development process is the analysis of task and content step (Overhead Transparency Six). Task analysis is a systematic means of identifying and sequencing the salient features of a task. It includes an identification of the basic steps of a task and the designation of the sequence in which these steps should be performed. We should consider the conditions that exist at the beginning of each step, the expected results of each step, and the possible mistakes in completing each step.

A problem in developing task descriptions for library skills is that these skills are often difficult to define. They often appear to be more intuitive than conducive to description because of the complexity and variety of approaches that may be used for library research. To support this statement, I refer to the to the article on "Research and Library Skills: An Analysis and Interpretation," by Stephen Stoan in the March 1984 issue of College and Research Libraries.[14]

In this article, Stoan discussed the discrepancy between librarians' perception of the efficacy of the library research strategy as we teach it and the creativity and subjectivity that scholars apply in the library research process. Abraham Kaplan used the term "logic-in-use" to describe the process that scholars use in conducting research.[15] Imagination, inspiration, intuition, and luck are all involved, which are difficult to describe and almost impossible to teach to undergraduate students as a way to use the library.

A good task analysis can help to avoid what, in hindsight, may appear as some very obvious mistakes. I remember one librarian from the slide-tape survey who confessed that she had been involved in the creation of a point-of-

3. ANALYSIS OF TASK AND CONTENT

A. Task Analysis

A Systematic Means of
Identifying and Sequencing
Salient Features of a Task

B. Content Analysis

A Systematic Examination of
the Factual Knowledge,
the Concepts, the Discriminations,
and the Skills Needed
to Complete Each Step

access slide-tape presentation to show students how to use microfilm machines. When the presentation was finished, the developers realized that they had not simplified the instructional process. They would now have to show the students how to use the slide-tape equipment so they could view the presentation on how to use the microfilm machines.

Content analysis, the second half of this step, is a systematic examination of the factual knowledge, the concepts, the discriminations, and the skills needed to complete each step of the instructional process. Often seemingly, simple library assignments require students to apply the high-order cognitive skills, according to Bloom's taxonomy, of analysis, synthesis, and evaluation.[16] It is no wonder that a brief media presentation hardly may be adequate instruction for many of the library skills we try to teach.

In conducting the content analysis for the problem of why junior-level college students could not find needed information using Psychological Abstracts, Frances and I found, despite the instructor's original assertions, that the instructional problem was not in learning the mechanics of Psychological Abstracts. The students learned how to master the basics of this abstract with relative ease. What they did not know how to do was to generalize from their class lectures, textbook, and background readings in order to develop a set of concepts and accompanying terms to use in their research. Once they found the journal abstracts, they did not have the necessary skills to analyze and evaluate the information and to make needed

discriminations as to which articles would be relevant and which would not. From this information we designed a series of exercises using a booklet and an audiotape for students to complete before attempting to use this abstract.

Development of Instructional Objectives

We should carefully keep in mind those behaviors we want to change in students as a result of library instruction. The behaviors generally relate to the application of knowledge or cognitive skills, but we also want the students to express positive attitudes toward the library. Such concerns should be addressed in the development of instructional objectives (Overhead Transparency Seven).

Instructional objectives are specific statements of what a student should be able to do or think following the completion of instruction. Several librarians have written on the application of instructional objectives to library instruction[17] Therefore, I will only briefly discuss this step. I suggest five considerations for each major statement of instructional objectives:

Response: What is the student expected to do?

Conditions: Under what conditions will the student be expected to respond?

Criterion: What are acceptable standards of success?

Rationale: Why does this objective exist? How is it related to others?

Personalization: How can this objective be placed in a student's frame of reference? How can it be made meaningful to the student?

4. DEVELOPMENT OF INSTRUCTIONAL OBJECTIVES

What Should a Student be Able to do Following Completion of the Instruction

A. Response

B. Conditions

C. Criterion

D. Rationale

E. Personalization

The use of instructional objectives is often very difficult in library instruction. Often librarians have little control over the assignments given students, the conditions of instructions, or the opportunities to examine the results.

In particular, we may have some difficulty in relating library instruction to many students' frame of reference. Some of the complexities of the library are beyond the comprehension of some students in terms of their intellectual development. For further information about this, I refer you to William Perry's book, Forms of Intellectual and Ethical Development in the College Years.[18] Perry found that college students go through stages of intellectual and ethical development. At the most basic level, some students enter college with a view of the world as being black or white. There is a right and a wrong. All problems have answers. The teacher knows the answer.

Often we introduce students to multiple and conflicting answers in the library. This both confuses and frustrates students in the early stages of their intellectual development. I am convinced that there are a few who believe we have a huge book somewhere in the library with all the answers, and each answer is less than a paragraph long. They think we could show them the answers. The slightly more advanced students realize that it is good for them to find the answers on their own, but they still think the answers do exist. In any case, library instruction that is effective with the more mature upper-level students may not work at all with lower-level undergraduates simply because it is beyond their intellectual development and their frame of reference.

Selection and Sequencing Instructional Strategies

The role of the classroom instructor is very important in the next step of the instructional development process—selecting and sequencing instructional strategies step (Overhead Transparency Eight). This step involves five major components: pre-instructional activities, information presentation, student participation, testing, and follow through.

The preinstructional strategies are concerned with instructing and motivating the students. Somewhere there are independent, self-motivated students who use the library without any course-related assignments, but that description does not fit most of our students. Probably those independent, self-motivated students we so fondly seek have learned long ago to tolerate, at best, the efforts of classroom instructors and librarians to teach them, or, at worst, to ignore us. The single most important motivator, however we may wish it otherwise, is, according to Patricia Knapp, the course assignment combined with a grade.[19] That is why we need to talk with instructors about the kinds of assignments they have made involving the use of the library and how these assignments will be evaluated before we give students library instruction.

The second major component of this step is the presentation of information, which is concerned with the use of descriptions, illustrations, examples, and summaries. It is at this point you decide why media may prove useful. You need to consider how the advantages offered by media may enhance the learning process.

5. SELECTING AND SEQUENCING INSTRUCTIONAL STRATEGIES

A. Preinstructional Activities

B. Information Presentation

C. Student Participation

D. Testing

E. Follow Through

The third component involves providing students with opportunities for practice and knowledge of the results. We do not teach students how to use the library simply because it is "good" for them. We teach them how to use the library so they can and will use the library. Student interaction and practice are necessary elements to reinforce learning. Unfortunately, such considerations are often absent in traditional classroom teaching. All too often students are passive receivers of information that they never have to apply. Or else, they merely have to feed it back to the instructor on a test several weeks later.

Testing, the fourth component, is concerned with the method of evaluating students during or following instruction. This can be informal through question and answer discussions or through more formal paper and pencil examinations. Finally, follow through should identify students in need of additional instruction and provide for remediation and enrichment. Use of worksheets, at least for lower-level students, is one good way both to test students and to identify those who need additional instruction, perhaps individually at the reference desk.

Selection of Media

Near the middle of the instructional development process is the selection of media step. For the beginner, this step appears to come too late. We are all too willing to decide early that we want to make a videotape or develop a set of slides to solve what we perceive to be an instructional problem. Too often

poor media selection has not allowed media to be used to their full potential. Selection based on press reviews, success in other situations, and similarities with commercial television or motion picture productions should be avoided.

In addition, librarians should be cautious about selection of media based on claims of learning effectiveness. Research has not given us sufficient data to allow valid sweeping generalizations about media, such as "videotapes are better than slides in providing an orientation to the location materials in the library," or vice versa. In addition to the book I referred to by Davies, Dean Jamison and his colleagues surveyed research on the effectiveness of traditional instruction, instructional radio and television, programmed instruction, and computer-assisted instruction. They concluded, "Students learn effectively from all these media, and relatively few studies indicate a significant difference in one medium over another or of one variant of a medium over another."[20]

As Levie and Dickie pointed out in the Second Handbook of Research on Teaching, most educational objectives can be attained through instruction presented through any of a variety of different media.[21] It may, however, take more time, money, expertise, and creativity to achieve certain instructional objectives with one medium than with another. Still, the main limitation is not with the characteristics of a particular medium but with the creativity that we apply to that medium.

Through careful analysis, librarians should determine the particular learning and task requirements and select a medium that facilitates the achievement of the instructional objectives most efficiently and effectively by

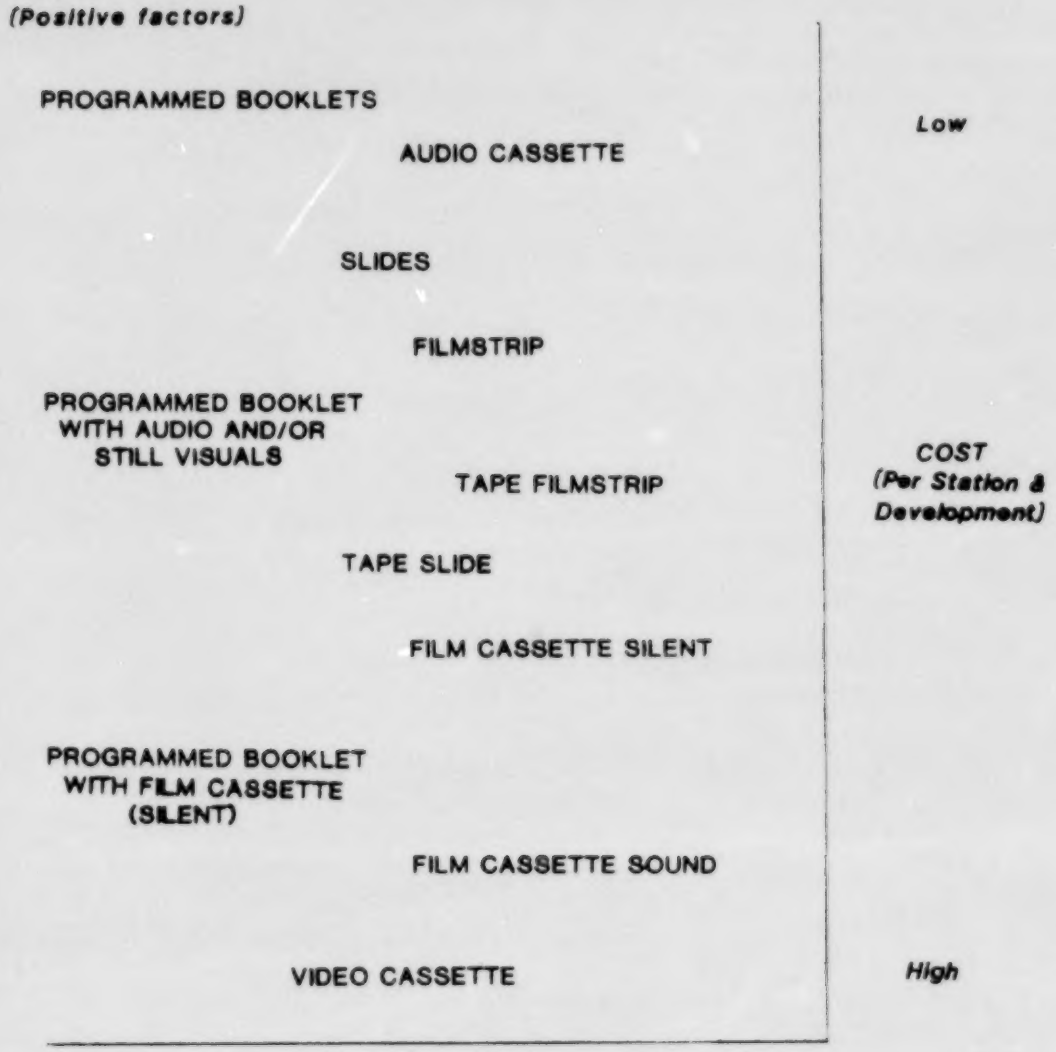
considering such factors as flexibility, durability, ability of the designer, cost effectiveness, convenience, and availability of the various media. There have been a number of useful models proposed for making media selection decisions easier. Perhaps the most useful model is the one proposed by Robert Diamond, who took into consideration the costs and flexibility of each medium (Overhead Transparency Nine).[22] As you can see, programmed booklets tend to be relatively inexpensive to develop and duplicate and flexible in terms of content individualization and modification. We can move down through the visual until we reach video cassettes, which are relatively more expensive and less flexible. Of course, some caution must be exercised in applying this and any other model too literally.

Development and Location of Necessary Resources

The next step is development and location of necessary resources (Overhead Transparency Ten). It is during this step that resources, such as materials, equipment, and people, must be developed, located, or obtained. Without certain resources, such as particular equipment and trained personnel, some media and instructional strategies may not be possible. Given some imagination, diligent searching, and a bit of diplomacy, a variety of resources can be developed or located on even a small college campus.

Nevertheless, even a relatively inexpensive format, such as slide-tape presentations, can be expensive. The respondents to the slide-tape survey estimated the costs to range from five hundred dollars for an instructional presentation to eight hundred dollars for an orientation presentation. I estimate that equipment costs for a presentation starting from nothing would

6. SELECTION OF MEDIA



From Robert M. Diamond, "Piecing Together the Media Selection Jigsaw," Audiovisual Instruction (January 1977): 50-52.

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7. DEVELOPMENT AND LOCATION OF NECESSARY RESOURCES

A. Money

B. Time

C. People (Expertise)

range from $1,400 to $1,500. This would include the purchase of a slide projector, a tape recorder, a camera, a copy stand, a tripod, lights, and close-up lenses. One eighty-tray of slides, assuming approximately two shots for every good slide, can cost from eighty to ninety dollars for film, development of the film, the slide tray, and the tape. One librarian responded to the questions about costs in the survey by stating that they were "unreal."

Time was another resource strongly emphasized by many of the respondents to the survey. One of the reasons we use media is supposedly to save time. It may, however, take considerable time to develop a media presentation. Millicent Palmer, in her July 1972 article in Drexel Library Quarterly, wrote that some experienced producers estimate that as much as 300 hours are needed for a twenty-minute slide-tape production.[23] I think that is a little high. For one thing, a twenty-minute program is probably too long. Anything over ten minutes has to be very good to hold students' attention, and probably the amount of time invested to make a program effective goes up exponentially with the length of the program. The average time reported for slide-tape program development from the survey was seventy hours. One librarian responded with the caution, "Always allow more time than you think it could possibly take."

A third major resource often mentioned in the survey was expertise. While slide-tape programs have been promoted as a media format that anyone can use successfully, that is not the message I received from the survey. Several of the librarians reported problems with equipment, photography, and

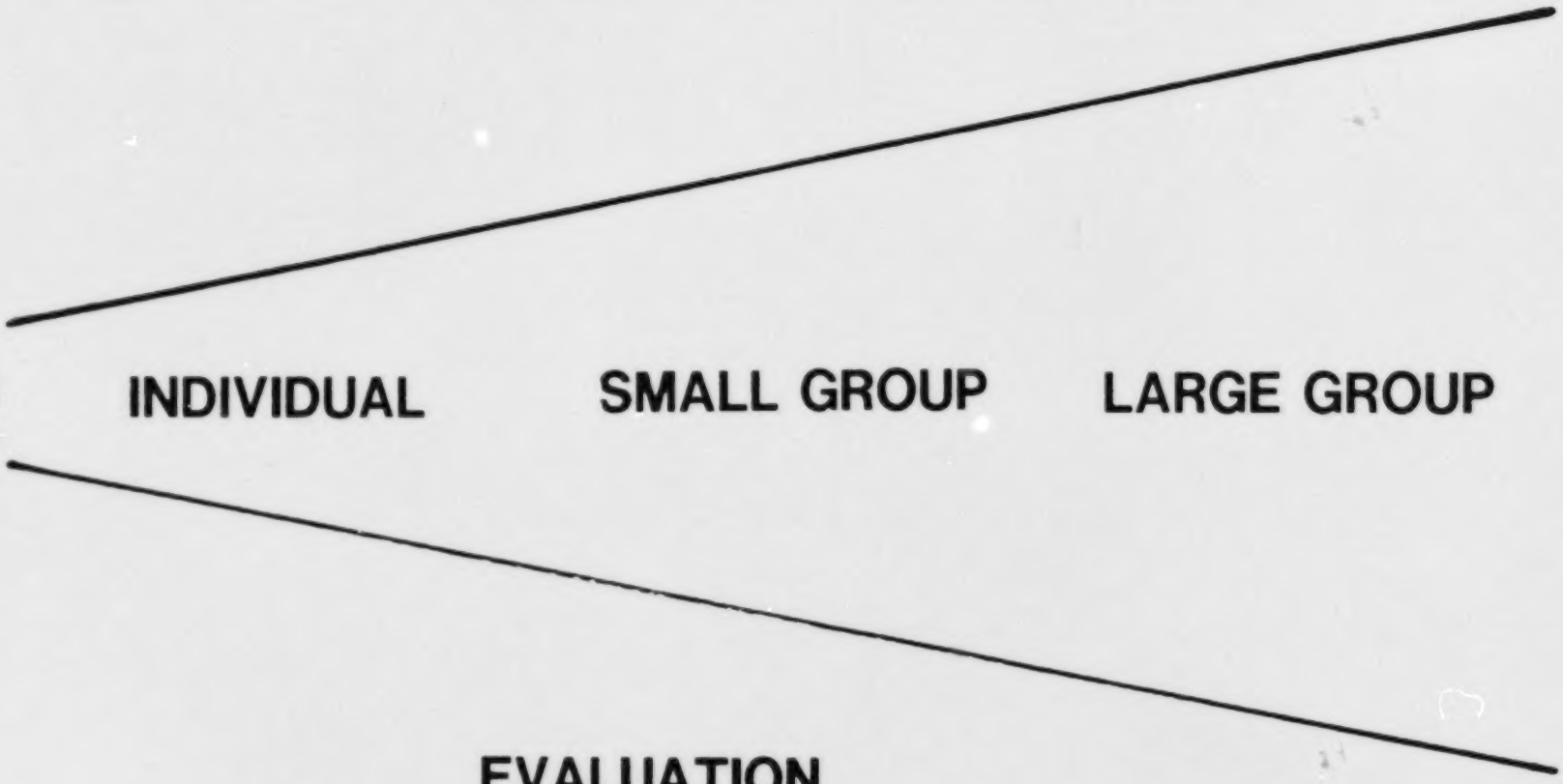
general production because of their lack of expertise. A number of them recommended that production of slide-tape programs not be attempted without the resources of audiovisual personnel.

Tryout and Evaluation

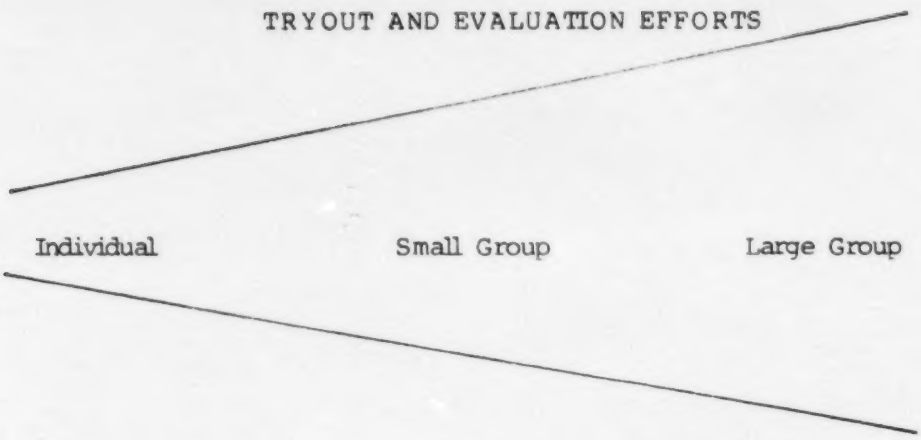
Of course, after we spend all this time and money, we "know" that we are going to have a good program so why bother to evaluate. A common practice for mediated library instruction is either not to evaluate or to evaluate only after the instructional materials have been produced. Evaluation, however, should be an integral part of the design and production process. The tryout and evaluation process (Overhead Transparency Eleven) should be a consideration from the very beginning of the instructional development process. Early on it can be conducted by having classroom instructors and fellow librarians review preliminary storyboards. Their suggestions can be very important in making vital changes before making large investments of time and other resources. Somehow, we are a little less receptive to these "helpful" suggestions after we have spent many hours on a project.

Subsequently, all or part of the learning sequences may be tested with individual students to note ambiguities, pacing difficulties, or other problems. The tryout and evaluation efforts need not be sophisticated pre-test and post-test pencil and paper procedures. You can move from interviews with individual students, such as student assistants, to discussions with small groups of students, to finally full field evaluations. The expansion of effort illustrated by the following graphic:

8. TRYOUT AND EVALUATION



TRYOUT AND EVALUATION EFFORTS



You can use various students and other individuals and groups to tryout parts or all of the program, but at some point you should involve the intended students under the conditions that they will apply the information from the instructional program.

Revision/Recycle

The emphasis on the revision/recycle step in the instructional development process results from a recognition that instructional development is an inexact art (Overhead Transparency Twelve). Learning is a very individual phenomena, and the conditions through which learning occur are constantly changing. A successful media program with the freshman students this year may not be as successful with freshman next year. If nothing else, you will relocate items in the library or purchase some new index or reference book you want to include in the program. Instructional objectives are often reached through "successive approximations." You need to be flexible in your approach to solving an instructional problem and not commit too much time and effort to one solution early in the process

9. REVISION/RECYCLE

Don't Assume the First Draft

Will Be the Final Version,

Everything Should Be Subject to Revision

Nevertheless (and this may seem like contradictory advice), at some point, the developer of the media program must take a strong interest in it. Usually the efforts of one person keep a program going. This spring I had occasion to contact a number of institutions to borrow their slide-tape programs for a workshop I conducted. I was surprised by the number of programs no longer in use. In fact, one program that had been written up a couple of times in the journals was not only no longer in use, but the person I talked with did not even know what had happened to the equipment. Needless to say, the original developer of the program had left the institution.

We might take a page or two from In Search of Excellence, which is yet another popular book like Megatrends that people pick up and read in airports as they go to conferences. In identifying lessons from America's best-run companies, the authors noted that one factor was associated with successful new-product introductions. The successful new-product had an enthusiastic volunteer champion. This champion is often obnoxious, impatient, egoistic, and perhaps a bit irrational, but he or she gets things done. The champion does not just think of new ideas. In fact, he or she may borrow heavily from others. Nevertheless, the champion has the staying power to implement ideas.[24] I think the same idea holds true for most library instructional programs. Without someone to push and promote it, a program is never developed or it is soon relegated to the shelf if that person leaves the institution.

Social Aspects

Finally, library instruction does not occur in isolation from the surrounding social conditions (Overhead Transparency Thirteen). Successful library instruction activities cannot be divorced from the attitudes, sensitivities, needs, and goals that exist among participants and the members of the general academic community. Even the most educationally effective mediated library instruction program will not be successful if: it is not supported by classroom instructors, it is not considered important by the students, and it is not considered an integral part of the library instruction program by librarians.

Several years ago I spoke at the LOEX conference on the role of librarians as change agents and the importance of us working with the classroom instructors in promoting library instruction. Today, I think in just a few minutes I can give you some more insight into the key role classroom instructors play in library instruction programs. As part of my dissertation,[25] I developed an attitude scale to measure the attitudes of classroom instructors toward the undergraduate educational role of the academic library. Briefly, I interviewed forty classroom instructors and conducted two surveys (the final one of 234 instructors at four institutions) to develop a thirty-item Likert scale. Through factor analysis, four factors emerged representing four distinct sets of attitudes of classroom instructors. At the risk of using some overhead transparencies that you all cannot read, I will share just a few of the highlights.

10. SOCIAL ASPECTS

Attitudes, Sensitivities,Needs,and Goals

The following are a few example statements from the first factor that emerged. This is the strongest, most well-defined, and most prevalent set of attitudes expressed by the instructors. (Overhead Transparency Fourteen)

Factor One

Agree	1. I should be able to leave to librarians the responsibility of teaching students how to use the library.
Disagree	2. It should reflect poorly on my department if the library is not heavily used by students on our courses.
Disagree	3. I should have the main responsibility for ensuring that my students make good use of the library.
Disagree	4. It should take considerable time for students to master the skills needed to use the library for my courses.
Agree	5. Teaching additional content in my courses should be more important than spending time teaching my students how to use the library.

Instructors strongly identified with this set of attitudes appear to resist any involvement with the library.

The following are some of the attitude statements associated with the factor that emerged second from the factor analysis (Overhead Transparency Fifteen):

FACTOR ONE

AGREE 1. I SHOULD BE ABLE TO LEAVE TO LIBRARIANS THE RESPONSIBILITY OF TEACHING STUDENTS HOW TO USE THE LIBRARY.

DISAGREE 2. IT SHOULD REFLECT POORLY ON MY DEPARTMENT IF THE LIBRARY IS NOT HEAVILY USED BY STUDENTS IN OUR COURSES.

DISAGREE 3. I SHOULD HAVE THE MAIN RESPONSIBILITY FOR ENSURING THAT MY STUDENTS MAKE GOOD USE OF THE LIBRARY.

DISAGREE 4. IT SHOULD TAKE CONSIDERABLE TIME FOR STUDENTS TO MASTER THE SKILLS NEEDED TO USE THE LIBRARY FOR MY COURSES.

AGREE 5. TEACHING ADDITIONAL CONTENT IN MY COURSES SHOULD BE MORE IMPORTANT THAN SPENDING TIME TEACHING MY STUDENTS HOW TO USE THE LIBRARY.

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Factor Two

Agree	1. Assignments requiring students to use the library demand too much of my time in relation to my other responsibilities.
Agree	2. I should expect only my brightest students to make good use of the library collections.
Agree	3. For students in my courses, the library should be considered primarily as a place to study textbooks, lecture notes, and similar materials.
Disagree	4. I should help my students develop the ability to use the literature of my discipline available in the library.
Disagree	5. I should be familiar with the range of library resources useful in teaching my students.

Instructors strongly identified with this set of attitudes view the library as having a minimal role in the educational process, perhaps see it more as a study hall than as a collection of important educational resources.

The following are some of the attitude statements from the factor that emerged third from the factor analysis (Overhead Transparency Sixteen):

Factor Three

Agree	1. Administrators should seek to admit a high proportion of very capable students if they want me to require my students to use the library.

FACTOR TWO

AGREE 1. ASSIGNMENTS REQUIRING STUDENTS TO USE THE LIBRARY DEMAND TOO MUCH OF MY TIME IN RELATION TO MY OTHER RESPONSIBILITIES.

AGREE 2. I SHOULD EXPECT ONLY MY BRIGHTEST STUDENTS TO MAKE GOOD USE OF THE LIBRARY COLLECTIONS.

AGREE 3. FOR STUDENTS IN MY COURSES, THE LIBRARY SHOULD BE CONSIDERED PRIMARILY AS A PLACE TO STUDY TEXTBOOKS, LECTURE NOTES, AND SIMILAR MATERIALS.

DISAGREE 4. I SHOULD HELP MY STUDENTS DEVELOP THE ABILITY TO USE THE LITERATURE OF MY DISCIPLINE AVAILABLE IN THE LIBRARY.

DISAGREE 5. I SHOULD BE FAMILIAR WITH THE RANGE OF LIBRARY RESOURCES USEFUL IN TEACHING MY STUDENTS.

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Agree 2. Administrators should ensure small classes to encourage me to require my students to use the library.

Agree 3. The size of the library collections in my discipline should serve as a measure of how well the library will serve the needs of my students.

Agree 4. Students should be able to learn needed library skills in my discipline quickly and independently.

Agree 5. The library should be quiet to encourage my students to use it.

Instructors strongly identified with this set of attitudes have a very traditional view of the academic library. It is used by bright students in small classes. They can learn how to use it easily, so they don't need any elaborate instructions. The quality of the library can be determined by the size of its collections. Finally, the library should be quiet.

I think if I asked a group of librarians involved in library instruction to respond to these questions, I would find much different attitudes expressed. One final factor did emerge from the factor analysis, and the following are some of the attitude statements associated with it. Keep in mind this is the weakest, most vaguely defined, and least common set of attitudes. (Overhead Transparency Seventeen)

FACTOR THREE

AGREE 1. ADMINISTRATORS SHOULD SEEK TO ADMIT A HIGH PROPORTION OF VERY CAPABLE STUDENTS IF THEY WANT ME TO REQUIRE MY STUDENTS TO USE THE LIBRARY.

AGREE 2. ADMINISTRATORS SHOULD ENSURE SMALL CLASSES TO ENCOURAGE ME TO REQUIRE MY STUDENTS TO USE THE LIBRARY.

AGREE 3. THE SIZE OF THE LIBRARY COLLECTIONS IN MY DISCIPLINE SHOULD SERVE AS A MEASURE OF HOW WELL THE LIBRARY WILL SERVE THE NEEDS OF MY STUDENTS.

AGREE 4. STUDENTS SHOULD BE ABLE TO LEARN NEEDED LIBRARY SKILLS IN MY DISCIPLINE QUICKLY AND INDEPENDENTLY.

AGREE 5. THE LIBRARY SHOULD BE QUIET TO ENCOURAGE MY STUDENTS TO USE IT.

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Factor Four

Agree	1. Librarians should help me by teaching my students how to use the library.
Agree	2. Administrators should promote the view that librarians are full partners with me in the educational process.
Agree	3. My students should have specific instructions on how to use the library in each course in which I require its use.
Agree	4. Administrators should take a leadership role in encouraging students to use the library.
Agree	5. I should be better prepared to teach students how to make good use of the library.

Instructors strongly associated with this set of attitudes believe that the library should have an active role in the educational process. One of the colleges included in my study was Earlham College, and the faculty at Earlham were strongly identified with this factor. Unfortunately, it was only one of four factors identified, and the other attitudes are much less supportive of the undergraduate educational role of the library.

Conclusion

Media do offer librarians a number of advantages in our efforts to instruct students in the use of the library. Nevertheless, use of media can be costly, time-consuming, and ineffective if not developed with considerable care and forethought. Application of instructional development principles and a good

FACTOR FOUR

AGREE 1. LIBRARIANS SHOULD HELP ME BY TEACHING MY STUDENTS HOW TO USE THE LIBRARY.

AGREE 2. ADMINISTRATORS SHOULD PROMOTE THE VIEW THAT LIBRARIANS ARE FULL PARTNERS WITH ME IN THE EDUCATIONAL PROCESS.

AGREE 3. MY STUDENTS SHOULD HAVE SPECIFIC INSTRUCTIONS ON HOW TO USE THE LIBRARY IN EACH COURSE IN WHICH I REQUIRE ITS USE.

AGREE 4. ADMINISTRATORS SHOULD TAKE A LEADERSHIP ROLE IN ENCOURAGING STUDENTS TO USE THE LIBRARY.

AGREE 5. I SHOULD BE BETTER PREPARED TO TEACH STUDENTS HOW TO MAKE GOOD USE OF THE LIBRARY.

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understanding of the resources needed should result in more effective use of media in library instruction programs. Librarians considering the development of mediated library instruction programs might reflect on the words of Beulah Howison, formerly Coordinator of Public Services at the University of Wisconsin-Stout (now retired). She wrote me some ten years ago in response to an inquiry about the development of slide-tape programs. She ended her letter with the following comment on her experience with this media format:

> It is very time-consuming!
>
> It is challenging!
>
> It is drudgery!
>
> It is maddening!
>
> I wouldn't have missed the experience for anything![26]

Thank You

REFERENCES

1. Larry L. Hardesty, Use of Slide/Tape Presentations in Academic Libraries (New York: Jeffrey Norton Publishers, 1978).

2. Robert C. Wilson et al., College Professors and Their Impact on Students (New York: John Wiley & Sons, 1975), p. 21.

3. Richard I. Evans, Resistance to Innovation in Higher Education (San Francisco: Jossey-Bass, Inc., 1968), p. 17.

4. Ivor Davies, Competency Based Learning (New York: McGraw-Hill Book Company, 1973), p. 161.

5. Richard O. Carlson, Adoption of Educational Innovations (Eugene, Oregon: The Center for the Advanced Study of Educational Administration, 1965), p. 83.

6. Quoted by Allan Cartter, "University Training and Excellence," in Improving College Teaching, ed. Calvin B. T. Lee (Washington, D.C.: American Council on Education, 1967), p. 155.

7. John Naisbitt, Megatrends (New York: Warner Books, 1982), p. 39.

8. Ibid., p. 41.

9. John Haney and Eldon Ullmer, Educational Media and the Teacher (Dubuque, Iowa: William C. Brown Co., 1970), p. 17.

10. Larry Hardesty and Frances Gatz, "Application of Instructional Development to Mediated Library Instruction," Drexel Library Quarterly 16 (January 1980): 3-26.

11. B. F. Skinner, The Technology of Teaching (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1968).

12. Robert F. Mager, Goal Analysis (Belmont, California: Fearon Publishers, 1972).

13. Robert M. Gagne, The Conditions of Learning, 3rd ed. (New York: Holt, Rinehart and Winston, 1977).

14. Stephen K. Stoan, "Research and Library Skills: An Analysis and Interpretation," College & Research Libraries 45 (March 1984): 99-109.

15. Abraham Kaplan, The Conduct of Inquiry: Methodology for Behavioral Science (San Francisco: Chandler, 1964), pp. 3-11.

16. Benjamin J. Bloom et al., Taxonomy of Educational Objectives (New York: David McKay Co., 1956).

17. Carla J. Stoffle, "Focus on Objectives: A Workshop on Writing Objectives on Bibliographic Instruction Programs," in Proceedings of Southeastern Conference on Approaches to Bibliographic Instruction, ed. Cerise Oberman-Soroka (Charleston, South Carolina: Continuing Education Office, College of Charleston, 1978): 7-32; "Writing Objectives for Bibliographic Instruction," Proceedings of the Midwest Federation of Library Association Workshop on Bibliographic Instruction (Detroit, Michigan: n.p., 1976); Jacquelyn M. Morris and Donald F. Webster, Developing Objectives for Library Instruction (Syracuse, New York: New York Library Instruction Clearinghouse, 1976); Sara Lou Whilden, "Planning a Library Instruction Program Based on Measurable Objectives," in Academic Library Instruction: Objectives, Programs and Faculty Involvement, ed. Hannelore B. Rader (Ann Arbor, Michigan: Pierian Press, 1975), pp. 13-21.

18. William G. Perry, Jr., Forms of Intellectual and Ethical Development in the College Years (New York: Holt, Rinehart and Winston, 1970).

19. Patricia B. Knapp, "College Teaching and the Library," Illinois Libraries 40 (December 1958): 829.

20. Dean Jamison, Patrick Suppes, and Stuart Wells, "The Effectiveness of Alternative Instructional Media: A Survey," Review of Educational Research 44 (Winter 1974): 55.

21. W. Howard Levie and Kenneth E. Dickie, "The Analysis and Application of Media," in Second Handbook of Research in Teaching, ed. Robert M. W. Travers (Chicago: Rand McNally, 1973), p. 859.

22. Robert M. Diamond, "Piecing Together the Media Selection Jigsaw," Audiovisual Instruction (January 1977): 50-52.

23. Millicent Palmer, "Creating Slide-Tape Instruction: The Librarian's Role," Drexel Library Quarterly 8 (July 1972): 251.

24. Thomas J. Peters and Robert H. Waterman, Jr., In Search of Excellence (New York: Warner Books, 1982), pp. 200-234.

25. Larry L. Hardesty, "The Development of a Set of Scales to Measure the Attitudes of Classroom Instructors Toward the Undergraduate Educational Role of the Academic Library" (Ph.D. dissertation, Indiana University, 1982).

26. Beulah C. Howison to Larry Hardesty, 1 April 1974.